

WHAT IS CLAIMED IS:

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1. A pharmaceutical composition, comprising a ligand which binds specifically to glial-derived or meningioma-derived tumor cells and a pharmaceutically acceptable carrier.

2. The composition of claim 1, wherein said ligand is an antibody which recognizes an antigen that is a glioma or meningioma specific chloride channel.

3. The composition of claim 1, wherein said ligand is a chlorotoxin-like compound.

4. The composition of claim 1, wherein said chlorotoxin-like compound is radiolabeled.

5. A method of differentiating glial-derived or meningioma-derived neoplastic tumor tissue from non-neoplastic tissue, comprising the steps of:

contacting a tissue of interest with an antibody that specifically recognizes an antigen in chloride channels of glial-derived tumor cells; and

measuring the level of binding of the antibody, wherein a high level of binding is indicative that the tissue is neoplastic.

6. The method of claim 5, wherein said level of antibody binding indicative of neoplastic tissue is from about 30% to about 90% of cells positively binding the antibody.

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7. A method of differentiating glial-derived or meningioma-derived neoplastic tumor tissue from non-neoplastic tissue, comprising the steps of:

contacting a tissue of interest with labeled chlorotoxin
10 which binds specifically to glial derived neoplastic tumor tissue; and
measuring the binding of the labeled chlorotoxin, wherein
a high level of binding is indicative that the tissue is neoplastic.

15 8. The method of claim 7, wherein said chlorotoxin is selected from the group consisting of native, synthetic and recombinant chlorotoxin.

20 9. The method of claim 7, wherein said labeled chlorotoxin is radiolabeled and the level of radiolabeled chlorotoxin binding affinity indicative of neoplastic tissue is from about 5 nM to about 5 micromolar.

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10. The method of claim 9, wherein said radiolabeled chlorotoxin is selected from the group consisting of ^{131}I -chlorotoxin and ^{125}I -chlorotoxin.

11. The method of claim 7, wherein said chlorotoxin is labeled with a fluorescent moiety.

12. The method of claim 11, wherein said fluorescently labeled chlorotoxin binding is determined by a method selected from the group consisting of fluorescence microscopy and fluorescent activated cell sorting.

13. The method of claim 10, wherein said labeled chlorotoxin binding is determined using positron emission tomography scanning.

14. A fusion protein, said protein comprised of:
a ligand that specifically recognizes an antigen in chloride channels of glial-derived tumor fused to;
a cytotoxic moiety.

15. The fusion protein of claim 14, wherein said ligand is a chlorotoxin-like protein.

16. The fusion protein of claim 14, wherein said ligand is an antibody.

5 17. The fusion protein of claim 14, wherein said cytotoxic moieties is selected from the group consisting of gelonin, ricin, saponin, pseudomonas exotoxin, pokeweed antiviral protein, diphtheria toxin, and complement proteins.

10 18. A pharmaceutical composition, comprising the fusion protein of claim 14 and a pharmaceutically acceptable carrier.

15 19. A method of treating an individual having a glioma or meningioma, comprising the step of administering to said individual a pharmacologically effective dose of the composition of claim 1.

20 20. A method of treating an individual having a glioma for meningioma, comprising the step of administering to said individual a pharmacologically effective dose of the composition of claim 18.

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